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NEW MEASLES TREATMENT MAY SAVE MANY LIVES

The blood serum of adults who had measles in childhood may be used to modify the disease in children so that it will take only a mild form devoid of serious after effects and yet will give immunity for life just as the normal form of the disease does.

This is the conclusion of Prof. R. Debre and Dr. Joannon of the University of Paris Medical School reported to the Health Committee of the League of Nations. More than a thousand injections of the serum have been without any bad effects. The efforts of Dr. Leon Bernard of the University of Paris resulted in the establishment of two prophylacticstations in Paris for the treatment of the disease.

"Up to the present time," Dr. Bernard said, "prophylactic methods have been used to some extent in the United States and Germany to secure temporary immunity. A serum from convalescent cases was used and injected in patients during the first six days after infection.

"But a durable immunity may be developed if the serum is not injected until the germs have had more time to incubate, as in the modified procedure of Prof. Debre where the injections are made only between the sixth and the tenth day after infection. A serum shortage problem was solved by the discovery that the serum of adults who have long since recovered from measles was as efficient as that taken from convalescent childres."

It is often forgotten, Dr. Bernard said, that measles is a serious disease to which man is universally susceptible. Every year there are thousands of deaths in France alone, and statistics from the most important countries show that the death rate from measles is falling more slowly than that of diphtheria, smallpox, scarlet fever and whooping cough.

Measles caused about a million deaths in Europe between 1900 and 1910, and in the death registration area of the United States from 1901 to 1920 there were more than 100,000 deaths. Measles is more dangerous in cities than in the country, and in Europe at any rate, the danger is directly proportioned to the density of the population, Dr. Bernard said.

Although as old as medical history, and so common that in cities over 90 per cent. of the population have had the disease by the age if eighteen, measles is still one of the mystery diseases which it has been extremely difficult to combat. It is believed to be caused by an extremely small organism which cannot be seen with the ordinary microscope, and which passes through a filter which stops ordinary germs.

With the possible exception of smallpox it is the most contagious disease known to man, and according to the U. S. Public Health Service, it is difficult to control because the symptoms of the disease are not obvious until about four days after infection.

"The importanceof measles is frequently underestimated," said Dr. Victor C. Vaughan, chairman of the division of medical sciences of the National Research Council, and one of America's leading epidemiologists, "and it has been commonly believed that the disease acts as a weeding-out process to eliminate the unfit at a very early age and does no harm to the strong. On the contrary, a study of measles in the U. S. army camps during the world war revealed that a person who has recently had measles is ten times more likely to die frompneumonia than one who has not.

"It is not over-sanguine to claim," Dr. Vaughan continued, "that if this disease, together with whooping cough, diphtheria, and scarlet fever, could be entirely suppressed, the average length of life would be increased by at least ten years.

"There is great probability that the work of Drs.Bernard, Debre and Joannon will lead to an eventual control of the disease," Dr. Vaughan said.

NEW POISONS MENACE WOMEN IN INDUSTRY

A plea that the federal government should provide for study of industrial poisons, which are menacing the lives of more women workers than ever before, was made by Dr. Alice Hamilton, professor of industrial medicine at the Harvard Medical School, in a recent address before the Women's Industrial Conference.

"A great many new and more or less unfamiliar industrial poisons have come into use since the war, and each month we hear of at least one new one," said Dr. Hamilton. "This brings about a serious situation, for unless the new poisons are carefully tested on animals, the human beings who use them in trade processes will be taking the place of experimental animals.

"Unfortunately, it seems to be nobody's duty to undertake the investigation of these new dangers. In Great Britain and in Germany the Central Department of the Factory Inspection Service assumes this as one of its obvious functions, but in the United States no state department is equipped to do this. The federal government has the necessary experts in its service, but none of the bureaus has a budget which would make such investigations possible. It is hard to understand why so rich and important an industrial country as ours should show penuriousness in this particular field."

There are fewer women than men engaged in industries involving hazards from lead, carbon monoxide, benzol and other poisons, Dr. Hamilton pointed out. But women are more susceptible than men to the industrial poisons and the number of women in hazardous industries is steadily increasing.

A further cause for alarm is that the effects of breathing poisonous fumes or absorbing particles of poison through the skin extend to the next generation.

"We have evidence, based on French statistics and on animal experiments that lead poisoning in the father affects the offspring, but the evidence is much stronger with regard to the effect of lead poisoning in the mother," she stated. "Striking statistics from French and English reports leave no doubt that a woman who has chronic lead poisoning is more likely to be sterile than a normal woman, and if her child is born living it is more likely to die within the first year of life. It is plain that if a poison is circulatingin the blood of the mother it is practically certain to affect the child."

Industrial wood alcohol poisoning, which may end in blindness or death, results from breathing the fumes, and is exactly like the poisoning from swallowing wood alcohol, Dr. Hamilton told the conference. At least three times the usual air space is required for safety in a workroom where wood alcohol is used.

"In some occupations carried on by women small amounts of wood alcohol are used in connection with shellac and dyes and the amount of fumes is too small to cause acute poisoning, but it is an established fact that slow chronic poisoning from repeated small doses may also cause loss of sight," said the speaker.

EAGLE ON ANCIENT CUP IS CLUE TO ITS AGE

An eagle, symbol of the proud and ruthless Roman Empire, when portrayed on a cup belonging to the early Christians must be taken as a significant clue to the cup's age. This is the latest report just made to the Archaeological Institute of America by Dr. William R. Newbold, of the University of Pennsylvania, on the mysterious "Great Chalice of Antioch," which has puzzled archeologists for the past ten years.

The chalice, made to be a holder for a cup used for religious purposes, is decorated with figures of Christ and the Apostles, and also with a wealth of symbolic design. If it was wrought in the first century A. D. thereis considerable likelihood that the figures of Christ and his followers may be portraits by a craftsman who had seen them or who was furnished with exact descriptions of portraits of them. If the cup dates only to the fourth century or much later, as some archeologists believe, then its importance as a historic document is somewhat less. Dr. G. A. Eisen, who has spent nine years investigating clues to the cup's history, has decided that it probably held the cup used at the last supper of Christ and his disciples.

Dr. Newbold points out that the eagle, the bird that flies nearest to the sun, was widely used as a symbol of immortality by the Romans and by earlier

civilizations.

"The eagle, however, occurs but rarely on Christian monuments," says Dr. Newbold. "It has never been found in Christian art prior to the fourth centyry."

The reason for this he ascribed to the fact that the Christians musthave strongly disliked the eagle because,"it was the most familiar symbol of the hated persecuting Empire, and it was itself a pagan idol. The eagle perched upon the standard of the Roman legion was the soldiers' peculiar divinity; to it sacrifices were offered and by it the most sacred of oaths was ratified."

"These facts supply negative data of some importance for the date ofthe chalice," he concluded. "The holder would probably belong either to the earliest period of the Church's history, before Nero's persecution, while Christianity,as a Jewish sect, was still a protected religion, or else it belongs to the age of peace which followed the edict of Milan in 313, when the monogram of Christ had replaced the eagle on the soldiers' standards, It is probable that the eagle could have been used as a Christian symbol at any time after the middle of the fourth century without giving general offense."

Dr. Newbold declines to decide which of the two periods produced the famous cup, though he states that "the evidence now in hand is distinctly in favor of a first century date for the holder."

VESUVIUS ERUPTION PREDICTED BY ITALIAN VOLCANO SCIENTIST

The recently reported activity of Mount Vesuvius, which may be only the prelude to a really important eruption, was prophesied several months ago by Dr. A. Malladra, noted Italian volcanologist, according to Dr. Henry S. Washington, of the Geophysical Laboratory of the Carnegie Institution of Washington.

"I was in Rome last summer when a report of a Vesuvius eruption excited the city," said Dr. Washington. "I wired to Dr. Malladra, who said that it was only a rumor, as such reports frequently are, but invited me to come down to Naples and go out for a look at the mountain anyhow.

"He showed me a place on the side of the volcano where in his opinion the next outbreak was due to come; and from what I can tell from reports that have reached me the new lava flows seem to be breaking out at this spot."

Vesuvius is no stranger to Dr. Washington. He has visited it every year or two for a long period, and took part in a special study of its last great eruption,which took place in 1906.

"Though this eruption is not to be compared with the cataclysm of 79 A.D., which wiped out Pompeii and Herculaneum," Dr. Washington stated, "it was really very severe. One or two hundred feet of the summit was blown off, and the crater was considerably widened. After the eruption the new crater had a depth of about 1200 feet, with very steep sides.

"Since that time it has been slowly filling up again, and a small cone,two or three hundred feet high, has been building. Last fall the lava level was up to within one hundred feet of the lowest point in the rim.

"Vesuvius, however, seldom sends lava flows over the rim of the

crater; they usually break out on the sides of the mountain, accompanied with the eruption of vast clouds of smoke and ashes. The production of lava from Vesuvius is much smaller, proportionately, than that from Etna. Etna, of course, is a greater mountain, being 12,000 feet high as against the 4,000 feet of Vesuvius; and its lava is much more copious and also more fluid than than of the smaller volcano."

Dr. Washington scouted the idea that the volcanic activities in Alaska had anything to do with those in Italy. "Not only are these two widely separated regions quite independent of each other so far as their volcanoes go," he said, "but even in Italy the earthquakes that have been shaking Tuscany have nothing to do with the eruption of Vesuvius. The earthquakes of northern Italy are normal earthquakes, caused by the slipping of faults, or blocks in the crust of the earth, just as the Montana and Santa Barbara quakes were caused. Volcano tremors are local affairs, and are rarely felt even at moderate distances."

PLAN TO ALTER SOUTH AFRICAN CLIMATE

"Rainfall over the whole of the central portion of the Union of South Africa is steadily decreasing year by year, and if this goes on at the present rate, the time will come when vast areas now supporting a farming and grazing population will be given over to the wild beasts of the desert. This process can, however, be checked. Its causes are known, and, being known, can be remedied."

This startling statement is not that of a sensational journalist in search of a thrilling story, but the considered judgement of a scientist, Professor Schwartz, of the University of Stellenbosch.

Put in a nutshell, the reason for this gradual decrease in rainfall is the drying up of the big tract known as the Kalahari, 400 miles from the Orange River, in the south to Lake M'gami in the North.

Up to comparatively recently this area was traversed by a whole system of rivers dotted with several lakes. This water system connected Lake M'gami with the Orange River. But the lake which acted asafeeding reservoir for this system is drying up owing to the silting up of the streams that fed it from the north. What water it still gets and holds has been diverted by some mysterious play of Nature and now, instead of flowing towards the South directly, flows eastward into the Zambesi and westward into the Kunene and Okarango rivers.

So far has this process gone that of recent years the term "desert" has come to be generally applied to the Kalahari, although the word is a misnomer. The area is not by any means waste land yet; it is a vast undulating plain, partly covered with forest and partly with rich long grass whenever there is the slightest rainfall. It borders on one of the best cattle raising districts in South Africa, Bechuanaland. The forests are, however, fast dying; there is ample underground water supplywhich may be tapped by artesian wells, but the water lies too deep to affect the roots of the trees. For mile after mile, one may see wilted and withered remains of what once were luxuriant growths.

To remedy this state of affairs, three schemes have been proposed, and

the time is fast approaching when the Union Government will have to make its choice between them.

The first is a vast system of irrigation of the Kalahari, feeding the canals out of artesian wells. This would, however, require the presence in the area of a considerable population of settlers of which there is so far no sign. The initial expense would, moreover, be prohibitive.

The second scheme consists in the building of dams across the Okarango River and one of the tributaries of the Zambesi, the Chobe River. This would retain masses of water in the M'gani lake and, while blocking its present ways of outflow, force the surplus water into the old, dried up channels passing through the Kalahari. There is little likelihood of this project being adopted, on the score of expense, which would be enormous.

There remains the third scheme, which, in default of the more ambitious ones, stands the best chance of being adopted, and is backed by Professor Schwartz and other South African scientists. It provides for the construction of a dam across the Kunene River, which, it is calculated, would restore a great part of the old scheme of nature for the irrigation of the Kalahari.

Owing to the fact that labor, machinery, and to a certain extent, materials, would have to be brought to the spot from very great distances over difficult country lacking proper means of communication, the expenditure of money and time is likely to be very considerable, but the importance of the issues at stake are believed to justify it. Not only would the reclaimed area of Kalahari open up a vast stretch of magnificent grazing land, forest, and valleys suitable for orange growing, but the process of drying up that is threatening central South Africa with eventual economic and social ruin would be arrested.

NEGRO SKIN GETS DARKER WITH AGE

Until he goes to heaven, the American Negro is probably whiter when he is born than at any other time, Dr. Melville Herskovits of the department of anthropology of Columbia University has shown that the skin of the negro gets darker as he grows older and that this is not due to sunburn.

A child's toy top, the kind that is used to teach kindergarten children the principles of color mixture, is used to detect the differences in color. The tops are fitted with disks of spectrum red, yellow, black, and white which can be superimposed one on the other and leave slices of each color visible. When the top is spun the colors appear to the eyes to merge into one. By trial, the amounts of each color exposed on the color top are manipulated until the combination to match the skin is found. The amount of black in the color can thus be determined.

The skin color of New York City colored boys five and a half years old had about 64 per cent, black, that of boys ten and a half years old 70 per cent., and that of seventeen and a half year old boys 74 per cent.

When Dr. Herskovits compared the skin color of adult negroes from New York City and Howard University in Washington, he found that the amount of

black was only 66 per cent. Adult negroesfrom an Ohio pauper institution had 94 per cent. black pigment in their color. This admixture difference, he says, is due to the degree of white blood in negroes of these two classes.

The negro with white blood has better social and economic advantages in his class and is more likely to befound in the universities and large cities than the pure blooded black negro, Dr. Herskovits said. A geneological study of more than five hundred colored adults in Howard University and New York City revealed the fact that only 20 per cent. were of pure African descent.

"The hypothesis that the lighter negro holds a socially strategic position within the negro community has seemed very plausible to me," Dr. Herskovits said, "but it was not until I tabulated, this material that this theory was so strikingly confirmed. But the negro boys of New York City more nearly represent an unselected portion of our American negro population.

"Due to migration this class probably represents not only the northern negro but the southern negro as well, and, in addition, the West Indian negro is represented here because he has migrated to New York in the past few years.

"It is obvious that the all-negro class is very small in this country. On the basis of the results of these various experiments, I feel however, that there is probably a percentage nearer 30 than 20 who are of pure African blood."

SCIENCE DEFENSIVE CHECKS CORN FOE

Every known device is being used to head off the advance of the corn borer from its original point of invasion in Canada toward the great corn belt of the middle west. So far, man instead of his foe, the skinny little caterpillar addicted to corn stalk diet, seems to be succeeding.

According to W. R. Walton of the Bureau of Entomology, the economic damage in this country is not yet serious in spite of the heavy losses in Canada. A strict quarantine making it possible to ship anything but shelled corn from the infested areas of Maine, Rhode Island, New York, Pennsylvania, Michigan, and Ohio is believed to be chiefly responsible for keeping down the spread.

A strenuous campaign is being carried on by state experiment stations to educate the farmers in the best methods of combatting the pest. The borer eats up through the stem and sometimes into the ear causing the whole plant to fall over and die. Through the winter it lives in the dead stalks and cobs. Consequently burning over the fields in the fall is strongly urged. Unfortunately, the labor problem where corn tracts ofgreat acreage are involved is so acute that this method is not always practicable.

Scientists at the Department of Agriculture and at the experiment stations throughout the infested regions are hard at work on the problem. Two wasp parasites have been introduced which lay their eggs on the borer. One causes paralysis and death at the initial sting while the young larvae of the other actually prey on the host caterpillar until it dies. These pests, artificially introduced to kill pests, Mr. Walton says, have been found in the field a year after their release, indicating their ability to survive in this climate when provided

with proper corn borer diet. While it is too soon yet to tell how much they help, the entomologists have hopes that they will prove really effective aids.

ANCIENT EGYPTIAN ARTISTS SIGNED WORKS

Long before Michael Angelo ever held a mallet and chisel there flourished in ancient Egypt a proud school of sculptors, and decorators, according to the researches of Miss Edith Ware, graduate student in the Oriental Institute of the University of Chicago, who recently made an extensive study of Egyptian manuscripts and reliefs in the university museum.

There was a very close relationship between the Egyptian religion and art, said Miss Ware, and on this account the individuality of the artists and sculptors was suppressed. There was a certain form which the workers in art were forced to follow. In many cases the artist's client resented leaving any evidence of the identity of the artist on his work of art. But, the human nature of the Egyptian Rembrandts was similar to that of our living artists, Miss Ware stated; they wanted their names to be perpetuated. Accordingly, they resorted to clever subterfuges for leaving some evidence of their identity.

Some artists included themselves in their group portraits. In many cases it is known that the client never detected the ruse. Others managed to leave some kind of an inscription on the margin of the work of art. Another method was to draw a scene in a studio portraying the artist and his assistants at work.

In the case of the most noted artists, Miss Ware added, it is evident that the church dignitaries and government officials were proud to have them leave their signatures. On some of the tombs the artists were allowed to give accounts of their skill, their family affiliations, and their studios. It was in these personal touches that the artist gave full expression to his ability and skill.

The most pleasing tribute to an Egyptian artist, said Miss Ware, is a relief showing the lord of an estate "feasting" and "rewarding" those who worked for his tomb. Among the artists he rewarded were an "outline draughtsman" and a "sculptor who makes statues."

The earliest known method of leaving the identity of an artist on his work was by means of portraits. And, she concluded, the first artist to leave such a signature on his work was one called Semerka, who designed and carved the tomb of prince Nebemakhet, about 2850 B. C.

BRIGHT COLLEGE MEN EXCEL ON TIGHT ROPE

Brains help--even in tight rope walking. The more intelligent a college student is the less difficulty he has in learning to stroll gracefully across a thirty foot wire. Superior mentality helps him to coordinate his muscles and enables him to replace useless, false movements with skilled ones more quickly.

This evidence was obtained when 56 students at the University of Denver volunteered to learn to walk across a tight wire three times in succession

without falling. The experiments, which shed light on the process of learning a complex physical activity, were made by Granville B. Johnson, director of physical education at the university.

Learning to balance in mid air is easier when fear can be eliminated, according to report of the experiments just made. In tests conducted last year, volunteers who knew nothing about the tight rope required 50 trials before they could successfully cross a bucking wire suspended six feet from the gymnasium mat. But this year, with a wire only three feet from the ground a new set of amateurs required only 38 trials.

If tight rope walking is hard to learn, it is also hard to forget.

"Men came back after one and two years absence and successfully walked the high wire the first time they made the attempt," said Prof. Johnson.

PREDICTS U.S. POPULATION 255 MILLION BY YEAR 2000

Not quite two and a half times its present population or approximately 255 millions of people will be the population of the United States in the year 2000, is the estimate of Prof. Howard B. Woolston of the University of Washington. From 1660 to 1860 the rate of growth was practically constant and the population doubled every twenty-three and a half years; but since the latter date the rate of increase has declined. The present estimate is based on the assumption that conditions prevailing in the United States for the fifty years preceding the World War will not materially change, and assumes further that the food supply and vital rates will be taken care of in the economic process of national development. Professor Woolston calls attention to the fact that the type of industry practiced and the standards of living affect population growth, which thus becomes a sociological as well as a biological function and is increasingly difficult to predict with accuracy.

Professor Woolston found that areas of high per capita wealth tend also to be areas of density of population. "Evidently wealth and density are correlated," he states in his report, "for where the rate of growth for wealth has been rapid, increasing density appears to have attended it." The New England states are cited as examples. Nevada is an exception, having high per capita wealth but low population density. This is probably due to the method of exploiting new land. A few men come first and by rough extractive methods obtain much wealth; as more people come in and the wealth is subdivided, the per capita wealth decreases. A period of agricultural development follows, but as the cheap land is exhausted the people turn to the cities where under skilled management wealth is again built up. The turning point between rural and urban development is reached when the land is worth more than $50 per acre and the country is peopled at a rate of more than eight families per square mile.

Preservation of nearly 300 ancient monuments in England is pronounced of national importance.

MARRIED CRIMINALS PREFER FRAUD TO FORCE

When an unmarried man embarks on a career of crime he is more likely to commit assault and battery or to use other direct and forceful tactics. But if the married man runs true to form he cautiously and secretly commits a crime of fraud. These tendencies in both white and negro criminals have just beenreported by Carl Murchison and Ralph Gilbert, of Clark University, following a study of 250 men prisoners in the Maryland State Penitentiary.

Intelligence tests of several hundred negro prisoners showed that the men who had been in prison more than two years made better intelligence scores than those who had served short terms. This was also found to be the case with white prisoners tested a year ago. Mr. Murchison states. From his findings, he concludes that "it seems impossible to hold that length of incarceration in the average American prison causes deterioration in ability to make scores in the Army Alpha intelligence tests."

TABLOID BOOK REVIEW

GENETIC PSYCHOLOGY MONOGRAPHS - Edited by the editorial board of The Pedagogical Seminary. Published at Clark University, Worcester, Mass. Bi-monthly. $7.00 per annum.

How children behave has always been an interesting study but it is only the past few years that haveseen psychology and serious scientific work include such observations. Now child behavior and genetic psychology need a publication that can handle research reports of monograph length, therefore this new periodical.

TABLOID BOOK REVIEW

FUNDAMENTAL CONCEPTS OF PHYSICS, By Paul R. Heyl. Baltimore: Williams and Wilkins Co. 1925. $2.00.

A brilliant literary and scientific achievement combined. A swift survey of the progress of three centuries from Newton to Einstein within the compass of a hundred pages, clear and correct, devoid of encumbering detail and embellished with poetic touches. Dr. Heyl has himself put the Einstein theory of gravitation to its severest test at the Bureau of Standards by weighing a body to the unprecedented precision of one part in a billion, yet he regards relativity as a mathematical fiction, useful because it fits the facts.

Railroad travel is declared to be twice as safe now as it was before organized safety work was begun.